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Before the
FEDERAL COMMUNICATIONS COMMISSION
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
The Development of Operational, Technical, and)
Spectrum Requirements for Meeting Federal, State) WT Docket No. 96-86
and Local Public Safety Agency Communications)
Requirements Through the Year 2010)

To: The Commission

**PETITION OF THE
NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL
FOR FURTHER RULEMAKING
TO ALLOCATE SPECTRUM IN THE 138-144 MHz BAND
FOR PUBLIC SAFETY**

The National Public Safety Telecommunications Council ("NPSTC") hereby submits the following petition requesting that the Federal Communications Commission ("FCC" or "Commission") allocate for public safety use a portion of the 138-144 MHz band being reallocated by the Federal Government pursuant to the Balanced Budget Act of 1997.

NPSTC is a coalition of public safety organizations formed to encourage and facilitate the implementation of the findings and recommendations of Public Safety Wireless Advisory Committee ("PSWAC"), to develop and make recommendations to appropriate governmental bodies regarding public safety communications issues, and to serve as a standing forum for the exchange of ideas and information regarding public safety communications. NPSTC currently consists of the following charter organizations:

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decision not to auction all of the 138-144 MHz spectrum and, instead, to set a portion of it aside for public safety. While Section 3002(c)(2) provides the Commission with an opportunity to take such action, Petitioners recognize that Congressional guidance and/or authority may be necessary.

NTIA's response to the Balanced Budget Act of 1997 includes the release of 3 MHz in the VHF band at 138-144 MHz (139.0-140.5 MHz and 141.5-143 MHz).³ That spectrum is currently used by the Department of Defense and the Federal Emergency Management Agency, which will relocate most of their operations by 2008. There will be indefinite use of the band at 36 military bases, with areas of interference protection ranging in most cases from 50 to 65 kilometers from those locations.⁴ Significantly, large portions of the country will have little or no permanent military use of the band, including such heavily populated areas as the Northeast, Great Lakes, and Northern California regions. These are among the areas of the country with the most severe need for additional public safety spectrum.

The NTIA Spectrum Reallocation Report notes that the Department of Justice and the Department of Treasury oppose the reallocation of the 138-144 MHz band, in part because it will prevent the Federal Government from pursuing proposals to share portions of the band with state and local governments for wide area public safety systems.⁵ Such a sharing arrangement was recently announced with the State of Wisconsin, and has been

³ U.S. Department of Commerce, National Telecommunications and Information Administration, "Spectrum Reallocation Report: Response to Title III of the Balanced Budget act of 1997," NTIA Special Publication 98-36 (February 1998).

⁴ *Id.* at 3-12, 3-14.

considered for other regions where there is not extensive Federal Government use of the band. We favor such arrangements, and share the concerns of the Justice and Treasury Departments. However, if the reallocation nevertheless proceeds, we urge that the spectrum be allocated by the FCC for public safety use, and not for commercial use through auctions. Such an allocation for public safety will also further the goals of the Justice and Treasury Departments of improving interoperability and overall public safety radio communications. However, if the 138-144 MHz band is subject to auctions, the spectrum will no longer be available for any public safety use—neither federal, state nor local.

II. THE 138-144 MHz BAND IS NEEDED FOR INTEROPERABILITY

One of the most critical needs identified by PSWAC is that of improved interoperability. All too often public safety personnel from different jurisdictions, or even from different agencies within the same jurisdiction, are unable to communicate with each other when responding to emergencies. That hinders their effectiveness and, more importantly, endangers the safety of life and property. The lack of interoperability has many causes, the most significant of which is that agencies operate on different frequency bands that cannot be accommodated within the same radio equipment.

PSWAC and its Interoperability Subcommittee ("ISC") addressed this problem in great detail, and ultimately recommended that the principal response should be the creation of a new "Public Safety Interoperability Band."⁶ The ISC concluded that

⁵ Id. at 3-11.

⁶ See PSWAC Report, Volume II, Appendix C, Interoperability Subcommittee Report, at §§10.3, 11.2.1, 12.3.7

the addition of spectrum technically close enough to these existing allocations could allow the manufacture of broadband radios capable of utilization of the existing and new allocations. Use of such radios would offer some spectrum relief; they would be economically viable for manufacturers and they would provide unoccupied spectrum for planning spectrally efficient use and, for the first time, nationwide interoperability.⁷

More specifically, PSWAC recommended that 2.5 MHz be allocated immediately for an interoperability band between 138 MHz and 512 MHz,⁸ the most commonly used public safety frequencies.

Unfortunately, other than 138-144 MHz, neither the FCC nor NTIA have yet to identify any frequencies that are likely to become available in this range in the foreseeable future. While 138-144 MHz is not scheduled by NTIA for reallocation until 2008, it will be cleared of most Federal users before that time, and could readily be used on a shared basis in the interim. Indeed, before the band was targeted by NTIA for reallocation, it had been recommended by PSWAC as a band for possible public safety sharing⁹ (and is being used by FEMA in emergencies to coordinate with state and local disaster response personnel). Now that it appears that the band will be released by the Federal Government, it should be reallocated by the FCC for public safety.

⁷ PSWAC Final Report, Volume II at 342, ISC Final Report § 10.4.

⁸ PSWAC Final Report, Volume I, at p. 21.

⁹ PSWAC Final Report, Volume I at p. 22 (§2.2.2.8) and p. 58.

III. THE 138-144 MHz BAND IS NEEDED FOR CONTINUED PUBLIC SAFETY USE OF VHF HIGH BAND.

In addition to providing for improved interoperability, the 138-144 MHz band is ideal for meeting related critical public safety requirements, since it is near the 150-170 MHz band, the most heavily used public safety communications frequency band. The 150-170 MHz band is the principal band for fire, police, forestry, highway and other public safety activities across the country. Over 65% of fire radio service assignments are in the band¹⁰ and, according to a recent National Institute of Justice survey, 73% of law enforcement agencies have their communications facilities in the band.¹¹ Because of its superior propagation characteristics in heavily wooded areas, it is also the favorite band for state forestry operations. While some of the current public safety users of the VHF band will eventually migrate to the 800 MHz range (including the newly allocated spectrum at 746-806 MHz), large numbers of public safety users are expected to remain in VHF as it will continue to provide low cost, technologically superior communications capability in many situations.

The principal advantage of VHF is the relatively low cost of equipment and excellent propagation characteristics for mobile/portable radio systems. Direct line of site transmission is unnecessary, permitting relatively few base stations to cover large areas of land, often including mountains, hills, and valleys. Thus the band is particularly popular for state-wide operations that need to cover a variety of terrain, including both rural and urban areas. In contrast, 800 MHz frequencies require far more expensive equipment,

¹⁰ Source: IMSA and CET data.

¹¹ National Institute of Justice, "Wireless Communications and Interoperability Among State and Local Law Enforcement Agencies," January 1998, at 3.

have propagation problems in areas with heavy foliage, and need many more sites to cover the same geographic area. As the Commission is well-aware, finding wireless transmission sites is exceedingly difficult due to zoning restrictions and neighborhood objections (which are often just as intense for public safety communications towers as for commercial wireless towers).

Because of these advantages, the VHF band is and will remain a critical frequency band for all aspects of public safety communications, notwithstanding the allocation of additional spectrum at 746-806 MHz. Moreover, existing VHF frequency allocations are inadequate to satisfy current or future requirements, and additional allocations are necessary for the following reasons.

First, VHF channels are necessary to relieve congestion in the band and to permit desperately needed expansion of public safety operations. The band is extremely congested throughout the nation, so much so that public safety frequency coordinators are rarely able to recommend new assignments in the VHF band which would not cause interference to existing uses. This is true in both urban and rural areas (where higher frequencies are often impractical for the reasons discussed above). While some VHF users will migrate to 746-806 MHz, the pace of migration is likely to be slow due to continued broadcaster use of the 746-806 MHz band, the very high costs of constructing entirely new systems at 746-806 MHz (as compared to adding channels to existing systems from contiguous or nearby bands), and the substantial differences in cost and propagation characteristics between VHF and 800 MHz. Furthermore, increasing spectrum demand is

likely to outpace any "give back" of VHF spectrum from those that do make the transition to higher frequencies.

Second, new VHF channels are needed to create channel pairs for more efficient, state of the art, communications systems. Originally, most uses of the band, and most wireless communications, were "simplex" over a single frequency (i.e., both "speakers" taking turns to use the same frequency), and did not require paired frequencies. Modern communications networks require paired frequencies, however, to provide duplex operation and mobile relay systems. Current congestion in the VHF band prevents rational re-channelization to create standard pairs. However, new "green space" in the 138-144 MHz band could allow for new VHF pairing and for substantial "cleaning up" of the VHF band for more efficient public safety communications.

Third, converting existing VHF systems to more efficient, state-of-the-art digital operations will be difficult without additional spectrum. Digital and analog will not work together on the same radio system. Thus a conversion to digital will require "side-by-side" operation to prevent service disruption. That cannot be accomplished, however, without "green space" for the new systems, something which simply does not exist in VHF in most parts of the country.

The current 150-170 MHz band is subject to "spectrum refarming" which, in theory, will relieve congestion in the band. In fact, there will be little positive effect from refarming on the VHF portion of the spectrum in the near term due to very large imbedded base of equipment. Until all users convert to new narrowband radio equipment, the theoretical benefits of dividing channels through refarming will remain largely just that--theoretical. However, the conversion process will take many years while public safety


users slowly convert to narrowband equipment. On the other hand, if new nearby spectrum is allocated for public safety (i.e., 138-144 MHz), that "green space" would encourage existing VHF users to make the conversion to narrowband. Transitioning to new equipment would be far easier with the availability of green space, and new spectrum would create the potential for new channel pairs (see above).

CONCLUSION

For the reasons set forth above, the Commission should take all necessary steps, including seeking Congressional guidance if necessary, to secure an allocation of 3 MHz from the 138-144 MHz band for public safety operations.

Respectfully submitted,

NATIONAL PUBLIC SAFETY
TELECOMMUNICATIONS COUNCIL

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